

## **REMARKS**

### **Information Disclosure Statement**

In the Office Action mailed February 27, 2009, the Examiner stated that the Information Disclosure Statement filed on April 28, 2006, by the Applicant failed to comply with 37 CFR §1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The Examiner's attention is respectfully directed to MPEP 1893.03(g) entitled Information Disclosure Statement in a National Stage Application. This section of the MPEP is particularly pertinent to this application since this application is a National Stage Application filed under 35 U.S.C. §371, and references cited in the Applicant's Information Disclosure Statement filed April 28, 2006, with the application were those references identified in the International Search Report prepared by the European Patent Office. The pertinent section of the MPEP cited above is as follows:

As a result of an agreement among the European Patent Office (EPO), Japanese Patent Office (JPO) and the United States Patent Office (USPTO), copies of documents cited in the International Search Report issued by anyone of these International Searching Authority Offices generally are being sent to the other Offices when designated in the International Application. Accordingly, in many national staging applications where the international search was conducted by EPO, JPO or USPTO, copies of the documents cited in the International Search Report are made available to the Examiner in the International Stage Application.

It is this very paragraph of MPEP §1893.03(g) which caused the Applicant not to submit copies of the references cited in the Information Disclosure Statement filed with the application on April 28, 2006, for, as stated above, all references cited in that Information Disclosure Statement were references cited in the International Search Report that was prepared by the EPO. Applicant is entitled to rely upon the foregoing paragraph cited from MPEP §1893.03(g), unless the policy stated therein of the USPTO, JPO and EPO has changed, and the EPO, in particular, is not providing copies of the references cited in the International Search Report the EPO prepares to the USPTO; or if the USPTO is not appropriately making those references supplied by the EPO available to the examiner's of the national stage applications that are associated with the International Search Report; then the present Applicant is entitled to know that. The Examiner is kindly asked to check the file again to see if the references cited in the International Search Report filed with the present application have been provided to or associated with the file in electronic form. If the Examiner finds that they are not in any way associated with the present application, then the Applicant will make the effort to find copies of those references and submit them to the Examiner for consideration.

#### Claim Objections

In the Office Action mailed February 27, 2009, claim objections were raised with respect to claims 1 and 2, and as the Examiner will please note, the noted claim objections have been dealt with by the foregoing proposed amendments to claims 1 and 2, and the claim objections are therefore now deemed to be moot.

### Claim Rejections

Claim 1 was also rejected under 35 U.S.C. §112, second paragraph, as being indefinite for the specific reasons set forth in numbered paragraphs 8-15 of the Office Action mailed February 27, 2009. Again, by the foregoing proposed amendments to claim 1, Applicant believes that he has addressed every one of the deficiencies that gave rise to the rejection of the claim 1 under 35 U.S.C. §112, second paragraph.

Claims 1 and 2 were also rejected under 35 U.S.C. §103(a) as being unpatentable over Kingham et al. (U.S. Patent 4,721,622) further in view of Finkel et al. (U.S. Patent 5,466,476) and Degli Angeli et al. (U.S. Patent 5,780,084).

For the reasons that follow, Applicant traverses the prior art based grounds for rejecting the claims of the present application.

In the present application, olive oil is used in total substitution of animal fats, shortening, and margarine. Moreover, the present invention aims at a stable incorporation of olive oil into pastry dough. This object is achieved by adopting a combination strategy of direct and indirect olive oil incorporation into the dough.

While not wishing to be bound by any particular theory, according to Applicant's technological view, emulsion globules are believed to be trapped and remain intact within the dough matrix of the present invention, even though the dough is worked out in the folding or multiple lamination step.

The Applicant's new technological approach provides a highly appreciable benefit, the stable incorporation a liquid olive oil (a liquid fat) in the dough, using a technique of mimic: an emulsion prepared under certain conditions of temperature, and prepared with a specific recipe, which includes combined ingredients namely water, sugars and egg yolk.

This technique of inserting liquid olive oil to the dough leads to the unexpected result of avoiding undesirable oil separation, which is particularly useful when liquid olive oil is more than just a reduced fat portion in the dough. It should be also be taken into consideration that animal fats, or the like, are totally excluded from the present invention. According to Applicant's scientific view, the technological approach of the present invention is in no way obvious to one of ordinary skill over the prior art of record.

Finkel et al.

Finkel et al. do not use vegetable oil as the sole source of fat. In fact, Finkel et al. disclose a dough made by the layering of two different phases, one containing flour, water, salt and *shortening*; and a second phase that uses starch, polyol, oil and/or *shortening*. Therefore, oil forms only a part of the fat source used in Finkel et al. In other words, Finkel et al. complements the olive oil present with an additional fat material, i.e. shortening. The use of shortening considerably eases the difficulty of incorporating oil (which is a liquid at room temperature) into dough.

The definition of shortening (as in Wikipedia, viewed 7/8/2009), is:

*"Shortening is a semisolid fat used in food preparation, especially baked goods, and is so called because it promotes a "short" or crumbly texture (as in shortbread). Shortening is basically just fat or lard from an animal or vegetable. The term "shortening" can be used more broadly to apply to any fat that is used for baking and which is solid at room temperature, such as butter, lard, or margarine. Shortening often has a higher smoke point than butter and margarine, and it has 100% fat content, compared to about 80% for butter and margarine.*

Finkel et al. uses the following definition for shortening:

*"As used herein, the term "shortening" or "oil" includes synthetic and natural triglycerides and other oil substitutes such as polyol polyesters of fatty acids and alcohols as well as polyesters of polycarboxylic acids. Oils generally have a melting point below 20° C., and thus are liquid at room temperature. Shortenings usually contain some solid fats, those having a melting point above 20° C., along with an oil."*

Moreover, Finkel et al. use the phrase "10% to about 30% oil mixed with from about 1% to 5% hardstock" (Claim 15), which implies a clearly different intermediate oil preparation for incorporation into the dough, compared to the "olive oil emulsion" of the present invention. The main process features of Finkel et al., that are contributors for the special characteristics of their resulting product, being polyols and shortening, are totally absent from the present invention.

Finally, the purpose of using monoglycerides in Finkel et al. is just to disperse flavors and other additives in the water. Instead, the present invention uses monoglycerides as an ingredient of the "olive oil emulsion." Therefore, the purpose of using monoglycerides is substantially different in the two cases.

Table 1: Comparison between the present invention and Finkel et al.

Differences	Present invention	Finkel et al.
<b>Aims/ Outcomes of Invention</b>		
a) Croissant-shaped pastry products with a cooked meat and cheese filling.	a)Pastry Crust and Pastry Crust Dough	
b)Use of olive oil in substitution of animal fats or margarine	b) Method of dough preparation, largely independent of processing	

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c) Stable incorporation of olive oil into the dough	temperatures and mix times.
d) Stabilization of the uniform honeycomb structure of the final product.	c) Stability on refrigerated or frozen storage
	d) Pastry dough low in fat and also low in saturated fats
	e) Layered product, characterized by having discrete regions containing the <b>shortening</b> composition and discrete regions which contain the developed gluten.

### Main Process Features

a) Both direct and indirect (emulsion) olive oil incorporation in the dough.	a) The use of polyols
b) Application of two phases of extended maturation prior to and after the shaping of the dough.	b) The use of Shortening
	c) Layering two different phases, one containing flour, water, salt and <b>shortening</b> , and a second phase which uses starch, polyol, oil and/or <b>shortening</b> .

### Other distinguishable differences

1	Use of olive oil only	Use of oil and Shortening
2	Direct and indirect olive oil incorporation in the dough	Direct incorporation
3		Use of Monoglycerides only for dispersing the flavors and other additives in the water

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Note: Applicant could not find the term "monoglycerides" in any place other than column 8, line 50-55 of Finkel et al.

Degli Angeli et al.

The main feature of Degli Angeli et al is the making of a layered and puffed pastry without wheat flour addition. Instead of wheat flour, Degli Angeli et al. make use of cereals and starches, i.e., raw materials different from the wheat flour generally used. In the detailed description of the patent, other examples of raw materials are mentioned, such as potato flakes, pre-cooked maize, precooked millet, wheat, fecula, and others. Degli Angeli et al. discloses the addition of vegetable oils, including olive oil in the first stage for preparing the oven product.

As can be easily seen, the scope of Degli Angeli et al. is substantially different from that of the present invention. Degli Angeli et al aim at a wheat flour-free pastry product. In that invention, oil is directly added during kneading of the raw materials with water. The intermediate dough product of the present invention has a different composition to the one described in Degli Angeli et al., as the present invention contains flour, without the applicant imposing restrictions on the origin of flour, and a combination of directly and indirectly (olive oil emulsion) incorporated olive oil.

Moreover, Degli Angeli et al. refer to a range of fat sources, also indicating a *combination* of different fat materials, by the phrase: “*at least one fat is selected from the group consisting of margarine, butter, lard, vegetable oils and seed oils*” (see Claim 25).

The present invention also solves a technological problem involved with the stable incorporation of liquid olive oil in pastries, a problem not dealt in the work of Degli Angeli et al. This is achieved by adopting a combination strategy of direct and indirect olive oil incorporation into the dough, as said above.

<b>Differences</b>	<b>Present invention</b>	<b>Degli Angeli et al.</b>
<b>Aims/ Outcomes of Invention</b>		
a) Croissant-shaped pastry products	a) Layered and puffed pastry,	

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with cooked meat and cheese filling.      without flour addition.

b) Use of olive oil in substitution of animal fats or margarine

c) Stable incorporation of olive oil into the dough

d) Stabilization of the uniform honeycomb structure of the final product.

#### **Process Features**

a) Both direct and indirect (emulsion) olive oil incorporation in the dough.      a) Use raw materials different to wheat flour.

b) Application of two phases of extended maturation prior to and after the shaping of the dough.

#### **Other distinguishable differences**

Use of olive oil only	Reference to a range of fat sources, including margarine, butter and lard (solid texture)
Direct and indirect olive oil incorporation in the dough	Direct incorporation

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#### Kingham et al.

The embodiment described in Kingham et al. is substantially different from the present invention in terms of assembly of product components. Kingham et al. describe the snack food product of their invention as having the shape and appearance of an elongated closed sandwich, thus having a different structure to the croissant-shaped dough with a cream cheese and cooked meat filling of the present invention.

Kingham et al. disclose a snack food product having a characteristic product assembly, which additionally displays a long shelf life stability. To achieve long term shelf life stability (for long periods measured in several months) even when stored at normal temperatures,



Kingham et al. develop a product comprising (a) an outer casing of a bread material, (b) a filling component wholly enclosed by said casing, (c) a sterile moisture-proof wrapping wholly enclosing said casing and said filling. The role of the sterile moisture-proof wrapping wholly enclosing the casing is supposed to be essential as "...said casing and said enclosed filling being microbially unstable, when devoid of said wrapping." Moreover, Kingham et al. refer to appropriate moisture contents selected so as to result in water activity values for the casing and the filling within certain corresponding ranges. To further restrict migration of water between said casing and filling components of the product, a barrier layer is disposed between said casing and said filling.

It is evident that Kingham et al. is silent on the use of olive oil and an olive oil-emulsion. Moreover, Kingham et al. does not refer to dough preparation/maturation in two phases. It is also evident that the present invention does not deal with improved strategies for shelf life stability nor with the respective appropriate range of water activities.

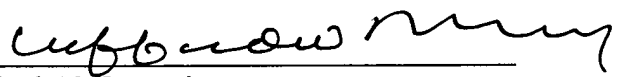
The Examiner should also note that the present invention does not attempt to claim novelty in providing dough products with fillings, in general. Instead, the present invention solves the technological problems associated with the use of liquid olive oil in dough making, and in the total replacement of other common fat sources (margarine, butter etc), conventionally used in pastry, which due to their solid or semi-solid texture are more easily incorporated in dough.

Regarding the obviousness of combining Kingham et al. with Finkel et al., and Degli Angeli et al. to produce a lower fat pastry product, one of ordinary skill would be motivated to reduce the total fat content by partially replacing conventional fat sources with olive oil according to the teachings of these references, but they would neither be directed to adopt a total replacement with a combination strategy of direct & indirect liquid olive oil incorporation, which

would require them to solve the implicated technological problem that would present to them, nor would they be directed to proceed in a two stage preparation/maturation of the dough, as taught in the present invention.

For all these foregoing reasons, Applicant respectfully requests entry of the attached Substitute Specification, entry of the claim amendments proposed above, and in careful consideration of the foregoing remarks, and a reconsideration of the present application in light thereof; followed by an allowance of claims 1 and 2, as amended, over all the prior art of record.

Respectfully submitted,

By:   
Clifford W. Browning  
Reg. No. 32,201  
Krieg DeVault LLP  
One Indiana Square, Suite 2800  
Indianapolis, IN 46204  
Telephone: (317) 238-6203  
Facsimile: (317) 636-1507  
E-mail: cbrowning@kdlegal.com

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## MARKED UP COPY OF SPECIFICATION

### DESCRIPTION

#### **Method of production of croissant type pastry products with ~~chareuterie~~ cooked meat and cream cheese filling, and with incorporation of olive oil into the dough**

The present invention refers to the production of *croissant type* pastries, with cooked meat and cream cheese filling, bearing the following traits:

1. The use of olive oil during dough preparation instead of the high melting point animal fats or margarine usually used.
2. The use of emulsion, facilitating the olive oil incorporation to the dough. The emulsion used is characterized by its high stability and provides the dough with extra mechanical strength for its further processing.
3. The use of liquid leaven prepared by a specific combination of microbial cultures, which ensure the consistency of the primary culture as well as that of the organoleptic traits of the final product (structure, colour, taste and flavour).
4. The application of suitable technological procedures and processes developed, aiming at:
  - a. Dough preparation of high mechanical strength facilitating its further processing.
  - b. Stabilization of the uniform honeycomb structure of the final product in conjunction with sustaining its organoleptic traits of freshness upon storage.

- c. Stable incorporation into the dough of the directly or indirectly mixed olive oil (Differentiating Factor) and maximum preservation of its organoleptic, physicochemical and nutritional characteristics.
- d. Long-term conservation (at least 30 days) under refrigeration (4°-6°C).

## **OBJECTIVE SUMMARY OF THE INVENTION**

This invention is aiming at the production of *croissant type* pastries, with cooked meat and cream cheese filling, with:

- 1. The direct or indirect olive oil incorporation instead of the high melting point animal fats or margarine usually used
- 2. The addition of combined technology auxiliary products and
- 3. The application of specific technological processes.

The aforementioned were achieved with the use of an emulsion of specific composition characterized by high stability which confers supreme mechanical resistance to the dough for its further processing as well as with the use of liquid leaven prepared by a specific combination of microbial cultures which ensure the consistency of the primary culture as well as that of the organoleptic features and the long-term conservation of the final product.

The present invention provides *croissant type* pastries with direct or indirect olive oil incorporation to the dough, cooked meat and cream cheese filing according to the following preparation protocol:

## **DETAILED DESCRIPTION OF THE PRODUCTION PHASES OF THE INVENTION**

### **PHASE 1**

Initially the emulsion and the liquid leaven are prepared. The emulsion (step1) is prepared by distilled monoglycerides homogenized in a high-speed mixer in the presence of 40°-45°C water. This is followed by the addition of olive oil, dextrose, fructose and egg yolk. The liquid leaven (step 2) is prepared by the inoculation of rye flour with specially formulated microbial cultures followed by incubation at 32°C for 18-24 hours in a dough kneader.

### **PHASE 2**

This is the main production phase; Flour and water are combined with liquid leaven, prepared as previously described (step 2), and kneaded together. The resulting dough is then transferred to maturation chambers where it remains for 120 minutes at 30°C and Relative Humidity (RH) 80%. Further on, the rest of the ingredients (i.e. flour, water, emulsion (step 1), sugar, eggs, olive oil and baker's leaven) are added. The mature dough is transferred to the shaping machine (extruder) and rolled into shape. The shaped dough passes through a series of dough rotors and increases in thickness. Dough sheets are then flattened down to 2.8-3 mm. The sheets that result from this procedure are now placed in a cutting-filling-folding machine where they acquire the croissant shape and simultaneously the cooked meat filling is incorporated. The folded croissants are placed into tin trays equipped with grooves (moulds) and transferred to maturation chambers, where they are left to mature for 8 hours at 28°C and RH 80%. The baking takes place next, at 180°C for 12-15 min. The baked product is then cooled down in the presence of high microbial quality air. The cream cheese is then automatically injected into the product. Finally the produce is packed in a modified atmosphere consisting of protective gases (CO<sub>2</sub>/N<sub>2</sub>), labeled and stored under refrigeration at 4°C-6°C.

The *croissant type* dough with olive oil, cooked meat and cream cheese filling, prepared according to the present protocol has excellent stability and homogeneity as far as structure is concerned due to the specific composition of the emulsion used for the indirect olive oil mixing, the use of liquid leaven and the application of two phases of extended maturation prior to and after the shaping of the dough. The physicochemical features of the olive oil that these products contain remain unspoiled due to low temperatures applied during production thus contributing to the preservation of the initial freshness of the product.